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EXAMINER	
TANG, KENNETH	

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/239,194	YATES ET AL.	
	Examiner	Art Unit	
	Kenneth Tang	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-83* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-83* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/16/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-83 are presented for examination.

2. This action is in response to the Amendment filed on 9/16/04.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 5 is directed to method steps which can be practiced mentally in conjunction with pen and paper, therefore they are directed to non-statutory subject matter. Specifically, as claimed, it is uncertain what performs each of the claimed method steps. The examiner suggests applicant to change "method" to "computer implemented methods" in the preamble to overcome the outstanding 35 U.S.C. 101 rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-83 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. In claim 1, "thread that are" (line 21) is indefinite because it is grammatically incorrect and it is not made explicitly clear in the claim language whether there is a singular or plural amount of threads. Claims 5 and 57 are rejected for the same reasons.

b. In claim 1, the term "extended context" (line 19) is indefinite because it is not made explicitly clear whether this term relates to the "modified context" (line 6) or if it introduces a new type of context. In addition, the phrase "the thread beyond those resources whose association with the thread is maintained by the operating system" is vague and indefinite because it is not made explicitly clear how a thread can be beyond a resource or those resources. Claims 5, 46, 54-55, 57, and 78 are rejected for the same reasons.

c. In claim 1, the terms "without modifying a pre-existing operating system" and "without modifying the operating system" are indefinite because it is not made explicitly clear whether modifying of the operating system constitutes modifying its code, modifying its configurations, modifying its functions, modifying associated data registers, etc. Claims 5 and 56 are rejected for the same reasons.

d. Claim 33 recites the limitation "returning control" in line 10. There is insufficient antecedent basis for this limitation in the claim. Claim 79 is rejected for the same reason.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2, 5-13, 17-18, 20-22, 26, 30, 32-36, 39-42, 50, 52-58, 60, 62-67, 71-72, and 74-83 are rejected under 35 U.S.C. 103(a) as being unpatentable by Nilsen et al. (hereinafter Nilsen) (US 6,081,665) in view of Chernoff et al. (hereinafter Chernoff) (US 6,000,028).

6. As to claim 1, Nilsen teaches a method, comprising:

- without modifying a pre-existing operating system of the computer, establishing an entry exception to be raised on each entry to the operating system at a specified entry point or on a specified condition, the entry exception having an associated entry handler, the entry handler programmed to save a context of an interrupted thread and modify the thread context before delivering the modified context to the operating system *("Exception handling", "entry into such contexts", "corresponding exception", "thread state variable", col. 25, lines 42-67)* ;
- without modifying the operating system, establishing a resumption exception to be raised on each resumption from the operating system complementary to one of the specified entries, the resumption exception having an associated exit handler, the exit handler programmed to restore the context saved by a corresponding execution of the entry handler *(col. 30, lines 25-28, col. 33, lines 40-67, col. 37, lines 60-67, col. 25, lines 40-67)*;

- scheduling concurrent threads of control by the operating system, each thread having an associated context, the association between a thread and a set of computer resources of the associated context being maintained by the operating system *(See FIG. 53 and FIG. 44, col. 24, lines 54-58, col. 37, lines 60-67, col. 25, lines 40-67)*;
- on detecting a specified entry to the operating system from an interrupted thread of the computer, raising and servicing the entry exception (*"when an exception is raised", "invoked", "exception handler", "thread", col. 26, lines 6-15)*;
- on detecting a complementary resumption, raising and servicing the resumption exception, and returning control to the interrupted thread *(col. 37, lines 60-67, col. 25, lines 40-67, col. 26, lines 6-15, col. 37, lines 60-67)*;

Nilsen teaches exception handlers *(col. 25, lines 42-67, See FIG 91, col. 33, lines 40-67, col. 37, lines 60-67, col. 25, lines 40-67)* but fails to explicitly teach them being cooperatively designed to maintain an association between one of the threads and an extended context of the thread through a context change induced by the operating system, the extended context including resources of the computer associated with the thread beyond those resources whose association with the thread is maintained by the operating system. However, Chernoff teaches exception handling controlled within the operating system having a context and extended context data structure stored in data tables that can be accessed by handlers for thread execution *(col. 25, lines 38-67 and col. 26, lines 1-12 and col. 88, lines 22-40, col. 33, lines 1-9)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of having the handlers being cooperatively designed to maintain an association between one of the threads and an extended context of the thread through a context change induced by the

operating system to Nilsen's exception handling system, because it allows the handlers to have control over the context data structure stored in the table *(col. 25, lines 38-67)*.

7. As to claim 2, Chernoff teaches the method wherein the operating system is an operating system for a computer architecture other than the architecture native to the computer *(see Abstract)*.

8. As to claim 5, it is rejected for the same reasons as stated in the rejection of claim 1.

9. As to claim 6, it is rejected for the same reasons as stated in the rejection of claim 1.

10. As to claim 7, it is rejected for the same reasons as stated in the rejection of claim 1.

11. As to claim 8, it is rejected for the same reasons as stated in the rejection of claim 2.

12. As to claims 9, Chernoff teaches wherein the computer additionally executes an operating system native to the computer, and each exception is classified for handling by one of the two operating systems *(col. 30, lines 16-53)*.

13. As to claims 10, Chernoff teaches wherein operating system and the interrupted thread execute in different instruction set architectures of the computer *(col. 30, lines 16-53 and col. 36, lines 1-9)*.

14. As to claim 11, it is rejected for the same reasons as stated in the rejection of claim 2.

15. As to claim 12, it is rejected for the same reasons as stated in the rejection of claim 9.

16. As to claim 13, it is rejected for the same reasons as stated in the rejection of claim 10.

17. As to claim 17, it is rejected for the same reasons as stated in the rejection of claim 1.

18. As to claim 18, Chernoff teaches the step of modifying a linkage return address for resumption of the thread to include information used to maintain the association *(col. 26, lines 23-58 and col. 30, lines 16-53)*.

19. As to claim 20, it is rejected for the same reasons as stated in the rejection of claim 2.

20. As to claim 21, it is rejected for the same reasons as stated in the rejection of claim 9.

21. As to claim 22, it is rejected for the same reasons as stated in the rejection of claim 10.

22. As to claim 26, it is rejected for the same reasons as stated in the rejection of claim 17.

23. As to claim 30, it is rejected for the same reasons as stated in the rejection of claim 18.

24. As to claim 32,, Nilsen teaches either the step of deferring delivery of an interrupt before interrupting the thread by a time sufficient *["interrupt trigger", "dispatcher", "priority", "executing task", "watchdog", "PERC", "asynchronous interrupts from the watchdog task and the alarm timer", "the dispatcher can only use its PERC stacks during times when it is sure that the most recently dispatched PERC task is blocked and/or suspended", "scheduled for execution block", "awakened", col. 37, lines 15-67 through col. 38, lines 1-17 and col. 76, lines 1-28].* Nilsen fails to explicitly teach checkpoints. However, it is well known in the art that thresholds or checkpoints can be used as a point of transition. For example, a threshold could be placed to indicate where context is reduced. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of a checkpoint where the interrupt reaches to the existing method for the reason of improving control of the program by having a marker or indicating point where there is a change of state.

25. As to claim 33, it is rejected for the same reasons as stated in the rejection of claim 1.

26. As to claim 34, it is rejected for the same reasons as stated in the rejection of claim 17.

27. As to claim 35, it is rejected for the same reasons as stated in the rejection of claim 2.

28. As to claim 36, it is rejected for the same reasons as stated in the rejection of claim 10.

29. As to claim 39, it is rejected for the same reasons as stated in the rejection of claim 18.

30. As to claim 40, it is rejected for the same reasons as stated in the rejection of claim 2.

31. As to claim 41, it is rejected for the same reasons as stated in the rejection of claim 9.

32. As to claim 42, it is rejected for the same reasons as stated in the rejection of claim 10.

33. As to claim 50, it is rejected for the same reasons as stated in the rejection of claim 18.

34. As to claim 52, it is rejected for the same reasons as stated in the rejection of claim 18. In addition, Chernoff teaches as part of servicing the entry exception, modifying a linkage return address of the interrupted process *(col. 26, lines 23-58 and col. 30, lines 16-53)* but fails to explicitly teach that the return address being deliberately chosen so that an attempt to execute an instruction from the return address on return from the operating system will raise the resumption exception. Nilsen in view of Chernoff fails to explicitly state that the linkage return address is being deliberately chosen so that an exception is raised. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of deliberately choosing the return address because this provides the control for when the exceptions occur.

35. As to claim 53, it is rejected for the same reasons as stated in the rejection of 52.

Chernoff teaches pointers that control the memory allocation *(col. 3, lines 50-67)*.

36. As to claim 54, it is rejected for the same reasons as stated in the rejection of 32.

37. As to claim 55, it is rejected for the same reasons as stated in the rejection of 32.

38. As to claim 56, it is rejected for the same reasons as stated in the rejection of claim 1.

39. As to claim 57, it is rejected for the same reasons as stated in the rejection of claim 1.

40. As to claim 58, it is rejected for the same reasons as stated in the rejection of claim 2.

41. As to claim 60, it is rejected for the same reasons as stated in the rejection of claim 17.

42. As to claim 62, it is rejected for the same reasons as stated in the rejection of claim 18.

43. As to claim 63, it is rejected for the same reasons as stated in the rejection of claim 2.

44. As to claim 64, it is rejected for the same reasons as stated in the rejection of claim 9.

45. As to claim 65, it is rejected for the same reasons as stated in the rejection of claim 10.

46. As to claim 66, it is rejected for the same reasons as stated in the rejection of claim 10.

47. As to claim 67, it is rejected for the same reasons as stated in the rejection of claims 2 and 10.

48. As to claim 71, it is rejected for the same reasons as stated in the rejection of claims 7 and 18.

49. As to claim 72, it is rejected for the same reasons as stated in the rejection of claim 18.

50. As to claim 74, it is rejected for the same reasons as stated in the rejection of claim 17.

51. As to claim 75, it is rejected for the same reasons as stated in the rejection of claims 10 and 25.

52. As to claim 76, it is rejected for the same reasons as stated in the rejection of claim 32.

53. As to claim 77, it is rejected for the same reasons as stated in the rejection of claim 54.

54. As to claim 78, it is rejected for the same reasons as stated in the rejection of claim 7.

55. As to claim 79, it is rejected for the same reasons as stated in the rejections of claims 1 and 33. In addition, Chernoff teaches as part of servicing the entry exception, modifying a linkage return address of the interrupted process *(col. 26, lines 23-58 and col. 30, lines 16-53)* but fails to explicitly teach that the return address being deliberately chosen so that an attempt to execute an instruction from the return address on return from the operating system will raise the resumption exception. Nilsen in view of Chernoff fails to explicitly state that the linkage return address is being deliberately chosen so that an exception is raised. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of deliberately choosing the return address because this provides the control for exceptions to occur.

56. As to claim 80, it is rejected for the same reasons as stated in the rejection of claim 53.

57. As to claim 81, it is rejected for the same reasons as stated in the rejection of claims 2 and 79. In addition, Nilsen teaches the service routine is invoked by an asynchronous interrupt *(col. 38, lines 4-11)* and the caller is coded in the instruction set native to the architecture *(col. 14, lines 1-6)*.

58. As to claim 82, it is rejected for the same reasons as stated in the rejection of claim 1.

59. As to claim 83, it is rejected for the same reasons as stated in the rejection of claim 52.

60. Claims 3, 14, 19, 27, 29, 31, 37, 45-49, 51, 61, 68-70, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsen et al. (hereinafter Nilsen) (US 6,081,665) in view of Chernoff et al. (hereinafter Chernoff) (US 6,000,028), and further in view of Blomgren (US 5,598,546).

61. As to claims 3, Nilsen fails to explicitly teach wherein the operating-system-maintained resources of the thread context include data registers of the non-native computer architecture, the method further comprising:

- modifying at least half of the data registers of the portion of the thread context maintained by the operating system before delivering the thread to the non-native operating system.

However, Blomgren teaches a system that can access and modify at least half of the data registers, specifically, 8 or 16 bits of a 32-bit register *["CISC mode", "low half", col. 17, lines 43-55]*. It is obvious that those modifications are done before delivery to the non-native operating system because all of this is done before the function calls for a return address. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of modifying at least half of the data registers before delivering the thread to the non-native operating system for the reason of improving data flow control. Data in a registry is categorized and separated to give restricted access towards certain information.

62. As to claim 14, it is rejected for the same reasons as stated in the rejection of claim 3.

63. As to claim 19, it is rejected for the same reasons as stated in the rejection of claim 3.

64. As to claim 27, it is rejected for the same reasons as stated in the rejection of claim 3.

65. As to claim 29, Nilsen teaches saving information before they are modifying and overwriting *(col. 15, lines 12-58 and col. 20, lines 22-30)*.

66. As to claim 31, it is rejected for the same reasons as stated in the rejection of claims 3 and 18.

67. As to claim 37, it is rejected for the same reasons as stated in the rejection of claim 3.

68. As to claim 45, it is rejected for the same reasons as stated in the rejection of claims 3 and 17.

69. As to claim 46, it is rejected for the same reasons as stated in the rejection of claim 29.

70. As to claims 47, Blomgren teaches a system that can access/modify/overwrite at least half of the data registers, specifically, 8 or 16 bits of a 32-bit register *["CISC mode", "low half", col. 17, lines 43-55]*. Nilsen teaches checking the validity *["checks first to see if this exception*

handler desires to handle the thrown exception. If so, we handle it here. If not, we simply throw the exception to the surrounding exception handler", col. 26, lines 5-15].

71. As to claim 48, it is rejected for the same reasons as stated in the rejection of claims 3 and 29.

72. As to claim 49, it is rejected for the same reasons as stated in the rejection of claim 28.

73. As to claim 51, it is rejected for the same reasons as stated in the rejection of claims 3, 17, and 18.

74. As to claim 61, it is rejected for the same reasons as stated in the rejection of claim 3.

75. As to claim 68, it is rejected for the same reasons as stated in the rejection of claim 3.

76. As to claim 69, it is rejected for the same reasons as stated in the rejection of claim 29.

77. As to claim 70, it is rejected for the same reasons as stated in the rejection of claim 47.

78. As to claim 73, it is rejected for the same reasons as stated in the rejection of claim 3.

79. **Claims 4, 15-16, 23-25, 38, 43-44, and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nilsen et al. (hereinafter Nilsen) (US 6,081,665) in view of Chernoff et al. (hereinafter Chernoff) (US 6,000,028), and further in view of Kukol (US 5,628,016).**

80. As to claim 4, Nilsen teaches the method wherein thread scheduler and the thread execute in different instruction sets of the computer but the reference fails to explicitly teach the entry and exit exception are automatically invoked, without explicit software request, on a transition between the thread instruction set and the operating system instruction set. However, Kukol teaches this automatically invoked exception handling *["handling of exceptions", "automatic", "exception-handling problem", automatically", "constructors", "destructors", col. 6, lines 50-67 and col. 13, lines 40-55, and col. 14, lines 28-67]*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of automatically invoking the exception handling to the existing method for the reason of improving system convenience through automation. Dynamic allocation prevents the program from manually having to do this, which requires a lot more work.

81. As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 4.

82. As to claim 16, it is rejected for the same reasons as stated in the rejection of claim 10.

83. As to claim 23, it is rejected for the same reasons as stated in the rejection of claim 16.

84. As to claim 24, it is rejected for the same reasons as stated in the rejection of claims 10 and 16.

85. As to claim 25, Nilsen teaches the step of setting of a register to a value that specifies actions to be taken by an exception handler invoked on the transition to convert operands from one form to another to conform to a data storage convention of the thread scheduler execution mode *["registers", "values", "pointers", col. 36, lines 41-49, and "translations of exception handling context", "contents of those registers are saved and restored", "entry into the exception handling context", col. 77, lines 36-43]*. In addition, it has already been established that Nilsen in view of Kukol teaches the conversion from one form to another (different instruction sets). Because of this, it is inherent that settings of a register to values that specify conversion actions are used to perform conversion actions.

86. As to claim 38, it is rejected for the same reasons as stated in the rejection of claim 4.

87. As to claim 43, it is rejected for the same reasons as stated in the rejection of claim 4.

88. As to claim 44, it is rejected for the same reasons as stated in the rejection of claims 2, 9, and 10.

89. As to claim 59, it is rejected for the same reasons as stated in the rejection of claim 4.

90. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable by Nilsen et al. (hereinafter Nilsen) (US 6,081,665) in view of Chernoff et al. (hereinafter Chernoff) (US 6,000,028), further in view of Blomgren (US 5,598,546), and further in view of Yates et al. (hereinafter Yates) (US 5,802,373).

91. As to claim 28, it is rejected for the same reasons as stated in the rejections of 1-3. In addition, Nilsen, Chernoff, and Blomgren fail to explicitly teach wherein at least some of the modified registers are overwritten by a timestamp *["time stamp", col. 7, lines 50-67]*. However, Yates teaches that a timestamp can be information that can be stored and associated with a file. It is also inherent that when this information is stored, it is done in data registers. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of storing a timestamp to modify a register for the reason of increasing the function of the program by being able to track time with a receipt or audit trail.

Response to Arguments

92. In response to I and II of the Remarks/Arguments, the Examiner has withdrawn objections these objection.

93. In response to III of the Remarks/Arguments, the Examiner has fully reviewed the arguments by the Applicant and has withdrawn the 101 rejections of claims 1, 33, 56, and 79. However, with respects to claim 5, the argument is still found to be unpersuasive.

94. In IV of the Remarks/Arguments, Applicant argues the 112 2nd issue, regarding "the thread beyond those resources whose association with the thread is maintained by the operating system" of being vague and indefinite is satisfied.

In response, the Examiner respectfully disagrees. As stated before, it is not made explicitly clear (it makes no sense) how a thread can be beyond a resource or those resources.

95. In IV of the Remarks/Arguments, Applicant argues the 112 2nd issue, regarding "without modifying a pre-existing operating system" as not being ambiguous. Applicant states that the modifying is of the "associated data registers" of the operating system.

However, the claim language does not reflect this and the Applicant is arguing limitations not claimed.

96. In IV of the Remarks/Arguments, Applicant argues the 112 2nd issue, regarding "returning control" lacking antecedent basis.

In response, the Examiner respectfully disagrees. It is not made explicitly clear in the claim language how "control" can be returned without control being introduced prior in the claim.

97. In V of the Remarks/Arguments, Applicant argues neither Nilsen nor Chernoff teaches allowing a "thread scheduler" to perform a "context change" using an extended context" that is "beyond" the "thread scheduler".

In response, the Examiner respectfully disagrees. Chernoff teaches exception handling controlled within the operating system having a context and extended (for the beyond resources) context data structure stored in data tables that can be accessed and altered by handlers (thread schedulers) for thread execution *(col. 25, lines 38-67 and col. 26, lines 1-12, col. 88, lines 22-40, col. 33, lines 1-9).*

98. In V of the Remarks/Arguments, Applicant argues that there is no "reasonable expectation of success" that would motivate the combination of the references.

In response, the Examiner respectfully disagrees. Applicant is referred back to the rejection and the mapped portions of the references of claim 1. Chernoff and Nilsen both teach using exception and interrupt handling to control the execution of instructions for a computer of a first computer architecture on a computer of a second architecture (see rejection of claim 1, e.g.).

99. *In V of the Remarks/Arguments, Applicant argues that the referenced col. 88, lines 22-40 do not relate to col. 25, line 4- col. 26, line 12 and that these sections do not teach an extended context.*

In response, the Examiner respectfully disagrees. The Examiner referenced col. 88, lines 22-40 to show that Chernoff teaches an exception handler (scheduler) that works with data tables. The Applicant does not mention that the Examiner also references col. 26, lines 1-12 which teaches extended context storing and accessing with an extended instruction pointer.

100. With respects to VI of the Remarks/Arguments regarding the Interview on July 2, 2003, Mr. Boundy is incorrect in that any sort of agreement was made with the Examiner. The Examiner asserts that if any agreement were made, it would have been indicated on the Interview Summary submitted by the Examiner.

101. In VI of the Remarks/Arguments, Applicant argues that Nilsen does not discuss any feature analogous to the "entry exception" and "exit exception", and therefore, lacks a reason to combine this reference with Chernoff.

In response, the Examiner respectfully disagrees. Chernoff and Nilsen both teach using exception and interrupt handling to control the execution of instructions for a computer of a first computer architecture on a computer of a second architecture (see rejection of claim 1, e.g.).

102. In VI of the Remarks/Arguments, Applicant argues neither claim 1 nor claim 33 recite language similar to the language of "the linkage return address being deliberately chosen so that an attempt to execute an instruction from the linkage return address on return from the service routine will raise a program execution exception" and the Applicant challenges the Examiner to provide a reference to support the utilization of Official Notice.

Examiner directed the Applicant to claims 1 and 33 because they also relate to and teach exception handling, resumption, returning control, etc. The Examiner also added that Chernoff teaches as part of servicing the entry exception, modifying a linkage return address of the interrupted process *(col. 26, lines 23-58 and col. 30, lines 16-53)*. The Examiner then states that Chernoff fails to explicitly state that the linkage return address is being deliberately chosen so that an exception is raised. In response to the Applicant's challenge of "Official Notice", Dibrino

(US 5,371,894) is provided (no new grounds of rejection are added), which teaches using an instruction return address to force an exception *(e.g., see Abstract)*. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the feature of the linkage return address is being deliberately chosen so that an exception is raised to the existing exception handling system of Nilsen and Chernoff because this provides a useful software debugging tool as well as precise exception handling *(col. 1, lines 14-23 and col. 2, lines 15-21)*.

Conclusion

103. Applicant's amendment necessitated the new ground(s) of 112, 2nd rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt
12/30/04

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